



# VEDANTA SAFETY AND HEALTH

FACT SHEET – MARCH 2019

## INTRODUCTION

As part of the Vedanta group's commitment to Zero Harm, we have embarked on a concerted and holistic effort to improve safety and health across all our operations, and within the communities in which we operate.

Our overriding goal is that each and every employee returns home safely at the end of each day. No fatality or injury is acceptable to us: the identification of hazards, the implementation of critical controls, the training of management and employees, and ensuring adequate emergency preparedness measures are in place, are all fundamental components.

While safety performance is often more visible and immediate, we are equally conscious of the longer-term risks associated with occupational hygiene and health, as well as the risks to health and well-being that exist within the communities surrounding our operations.

## GOVERNANCE, POLICY AND STRATEGY

Health and safety is a key focus of our Board Sustainability Committee, which is chaired by a senior independent director.

The group Executive Committee reviews safety and health performance at every meeting, and considers recommendations for improvement of both internal and external experts.

We also have a Health, Safety and Environment (HSE) council that meets monthly and our business HSE Heads also meet formally each month. An HSE Forum of our Chief Operating Officers also meets quarterly.



## SAFETY IN NUMBERS 2017/18

Tragically, there were nine fatalities across the group

921,550 man-hours of training on safety

100% periodical medical examination undertaken

Lost time injury frequency rate (LTIFR) reduced from 0.39 in 2016/17 to 0.34 in 2017/18



## IN MEMORIAM – colleagues lost in 2017/18 and to-date in the 2018/19 financial year

Mr. Rodgers Kapapi, KCM,  
9 May 2017

Mr. Stephanus Moore, VZI,  
19 August 2017

Mr. Webster Chingwe, KCM,  
27 August 2017

Mr. Umesh Pradhan, IOB,  
3 September 2017

Mr. Sawar Lal Kumhar, HZL,  
3 November 2017

Mr. Manoj Naik, IOB,  
2 December 2017

Mr. S. Gunasekaran, Sterlite Copper,  
9 December 2017

Mr. Shayam Das Mahant, BALCO,  
15 December 2017

Mr. Govind Kumar, HZL,  
28 March 2018

Mr. Roshan Lal Regar, HZL,  
1 April 2018

Mr. Kevin Chongo, KCM,  
26 April 2018

Mr. Boikanyo Montsho, VZI,  
25 May 2018

Mr. Babu Lal, HZL,  
6 June 2018

Mr. Ezekia Mwape, KCM,  
15 June 2018

Mr. Benson Solchi, KCM,  
26 July 2018

Mr. Fredrick Musonda, KCM,  
8 August 2018

Mr. Prakash Chandra, HZL,  
30 August 2018

Mr. S Mohd, BALCO,  
2 September 2018

Mr. Devi Lal, HZL,  
13 September 2018

Mr. Gopal Aheer, HZL,  
21 November 2018

Mr. Sohan Lal Sharma, HZL,  
21 November 2018

Mr. Sourabh Prakash Bharti, HZL,  
29 November 2018

## ADDRESSING THE CHALLENGE

After detailed internal investigations following each incident, our reviews have shown that the key causes of fatalities were related to activities involving vehicles, including driving and ground controls.

In response to an increase in fatalities we introduced additional safety standards together with the training of 240 employees and designated as Standards Champions to drive implementation. We also recognise that poor housekeeping contributes to many incidents and have launched a housekeeping drive with a target of achieving 90% compliance across the group. Through this we have seen a remarkable improvement in housekeeping standards. We have also redesigned the safety function at our operating business units ensuring that each business unit has a nominated professional leader to influence and drive safety culture.

## PERFORMANCE

Despite Vedanta's consistent efforts to strengthen our safety performance, we have seen an increase in fatalities. This is unacceptable to us, and is a matter of great regret and concern for the entire Vedanta group. We have analysed the root causes of these incidents and have come up with definitive steps to stem and reverse this trend, through visible felt leadership; validating the effectiveness of critical risk controls; and better engagement and management of our business partners.



## FATALITIES

### FIVE-YEAR PERFORMANCE

	Total recordable fatalities	Fatality frequency rate (per million hours worked)	Total hours worked
<b>2013-14</b>	19		
<b>2014-15</b>	8	0.03	252,440,801
<b>2015-16</b>	12	0.06	207,758,595
<b>2016-17</b>	7	0.06	192,133,113
<b>2017-18</b>	9	0.04	209,892,584
<b>2018-19 YTD</b> (as at 23 Jan 2019)	13	0.07	188,572,398



## BHARAT ALUMINIUM COMPANY (BALCO) – THE CHETNA PROGRAMME

Introduced in May 2018, this training programme is designed to keep safety “front of mind” by providing tools and information focussed on preventing injuries. The programme has reached over 6,500 employees and business partners so far.

The programme focusses on five life-saving behaviours:

- Eyes on hands
- Eyes on path
- Assess the area
- Body limits
- Line of fire

Chetna’s focus is on individual habits and behaviours. We have found that we continue to record injuries, even when all concerned have been trained in safe procedures and have the right equipment – often due to small, unintentional errors. It is clear that blaming or penalising individuals for these errors is pointless. So we have developed this tailored safety training programme, which focusses on promoting appropriate safe behaviour at workplace at all times.

Chetna is being rolled out across BALCO, first at the plant and then at the mining operations.



## INJURIES

### FIVE-YEAR PERFORMANCE

	Total lost time injuries	LTIFR	Total recordable injuries	Recordable injury frequency rate	Total hours worked
<b>2013-14</b>		<b>0.54</b>			
<b>2014-15</b>	117	0.46	369	1.46	252,825,849
<b>2015-16</b>	103	0.46	255	1.23	207,758,595
<b>2016-17</b>	75	0.39	225	1.17	192,133,113
<b>2017-18</b>	72	0.34	244	1.16	209,892,584
<b>2018-19 YTD</b> (as at 23 Jan 2019)	85	0.45	249	1.32	188,572,398

Lost time injury – an occupational injury or diseases that results in a worker’s inability to perform routine work functions on the next calendar day after the injury is a classified lost time injury. Inability to perform routine work functions includes cases resulting in either assignment of alternate or restricted duty or missed workdays.

# COMMITMENTS AND TARGETS

Vedanta has ten Safety Performance Standards



- 1: Electrical safety
- 2: Isolation
- 3: Work at height
- 4: Confined space
- 5: Vehicle and driving
- 6: Ground control
- 7: Molten material
- 8: Machine guarding
- 9: Crane and lift
- 10: Pit waste and dump stability

All the business units are mandated to adhere to these standards. We have identified Champions for each standard across the business and performance is being monitored internally and at corporate level.

## THE FOLLOWING INDICATORS ARE MONITORED IN RESPECT OF SAFETY PERFORMANCE:

HIPOs (High Potential Incidents);

closure of lessons learned from Safety Alerts;

corrective and preventative actions from VSAP audits; and

housekeeping (5S)

Because we know that serious safety incidents are inevitably associated with systemic failures, we monitor and learn from leading indicators. We also measure safety training in man-hours, number of safety audits, observations and compliance, near miss reporting, and others both internally and at a corporate level

Our 'Vedanta Sustainability Assurance Programme' (VSAP) was formulated based on the Vedanta Sustainability Framework, which was developed after recommendations made in 2010 by Standard Chartered. VSAP audits are conducted annually across Vedanta by our management assurance team, along with an external third party, Det Norske Veritas (DNV). The results are critically assessed by Vedanta's leadership.

These audits cover policies and management and technical standards, with special focus on all of the safety performance standards – which are assessed and scored based on the effective implementation of the requirements. Audit results are also directly related to performance bonuses.

All Vedanta businesses have stringent onsite emergency preparedness and response plans to mitigate any consequences arising out of emergencies at the workplace. Periodic 'emergency drills' are conducted to ensure the effectiveness of emergency plans.

## INJURY ANALYSIS

There are a range of causes for injuries across all operations. These include:

- transportation related incidents
- fall of ground, blasting injury
- hot metal burn injury
- slip and trip
- fall of object
- hand injury while performing manual work and others



## ROOT CASE ANALYSIS

Detailed investigations are carried out into all incidents, in order to identify root causes and to identify control measures to be put in place. This information is immediately shared among employees during 'Toolbox Talks'. Learnings on HIPOs are shared across the businesses and discussed during the monthly group safety meetings and on-job awareness is created through specific campaigns, poster competitions to ensure everyone – on all sites – is fully engaged.



## VEDANTA SAFETY OVERHAUL – MAIN AREAS OF INTERVENTION

- **Redesigned the HSE responsibility structure to drive safety performance**  
Appointed Chief Health and Safety Officers and Environment Managers to enhance engagement with businesses on safety. Also appointed site-based line leaders to implement effective safety controls. Experienced employees were given the responsibility at regional levels to drive safety performance and ensure that knowledge sharing and lessons learned are adequately implemented across all sites.
- **Added new safety standards**  
Apart from the six existing standards, new standards on machine guarding, cranes and lifting, molten metals and pit, dump and stockpile safety were added. All sites are expected to strictly adhere to the provisions of these standards and will be audited against their implementation in our annual VSAP audit.
- **Appointed zone-wise managers**  
To ensure that every area in our operations adheres to all principles of safe operation, we have appointed zone-wise managers who are accountable for the overall safety of their areas.
- **Hired experts to drive international safety practices**  
Eleven global safety experts have been recruited to strengthen the group's safety practices in line with international best practice
- **Introduced safety as a competency metric to evaluate employee performance**  
Safety competency was introduced as an indicator in the KPIs of each employee. This will help us track employees on their ability to follow safe behaviour standards as well as keep themselves abreast of safe work practices through training and capacity building programmes.

## SAFETY TRAINING ASSESSMENT

Everyone working on any Vedanta site is included in all aspects of safety training and assessment, as well as in safety performance measuring and reporting. This includes contractor employees, third-party employees, truck drivers, part-time employees and visitors. We are working to develop safety management software which will fully include contractor management – ensuring that all of the relevant information about contractor and third-party employees is captured and monitored by Vedanta.

## SAFETY AS AN EMPLOYEE COMPETENCE METRIC

In order to ensure the effectiveness of this addition to employee KPIs, we have developed a Safety Competency Assessment process, which strengthens the existing Safety Management System by ensuring that employees have the necessary safety-related skills, experience and knowledge at they are trained to apply them in order to safely perform their jobs.

This allows them and us to mitigate risk and ensure that all employees are always safe at the workplace – thus achieving our vision of 'Zero Harm'. 2017/18 was the first year this standard was implemented, and assessment was carried out by employees themselves. It has yet to formally impact on performance reviews.



## VEDANTA'S HEALTH AND SAFETY POLICY

At Vedanta, we are committed to the effective management of health and safety as an integral part of our business. The health and safety of our employees and stakeholders is of paramount importance and our aim is Zero Harm.

With this in mind, Vedanta ensures that all our operations comply with applicable national, regional and local health and safety regulations and statutory obligations and other requirements, and we develop, implement and maintain health and safety management systems aligned with our sustainable development commitments and beliefs and consistent with world-class standards. Continuous improvement is critical – through setting and reviewing targets, assessing and reporting health and safety performance, using appropriate best available practices and providing all employees with appropriate training.

We have a responsibility to prevent injury and ill health to all our employees by providing a safe and healthy work environment and by minimising risks associated with occupational hazards. In addition, we must promote a positive health and safety culture through effective communication, participation and consultation with employees in the workplace.

All Vedanta operations carry out regular health surveillance and risk-based monitoring of all employees, including Business Partner employees, and ensure that those Business Partners subscribe to the same principles and practices to which Vedanta adheres.

## KEY OCCUPATIONAL HEALTH ISSUES

Noise and vibration

Hazardous substances

Asbestos-containing materials

Ergonomics-related issues

Ionising and non-ionising radiation

Thermal stress

Fitness for work

Specific requirements of expectant and new mothers

## OCCUPATIONAL HEALTH AT VEDANTA

**All Vedanta's occupational health management programmes are measured against the requirements of the International Finance Corporation (IFC) – its Performance Standards, EHS General Guidelines and Sector Guidelines.**

Vedanta requires that every operation have and maintain a health management system that minimises the hazards and risks to employees and third parties. Operations must aim to reduce the number of ill-health related incidents to zero, and must ensure there is a system in place for reporting, investigating and communicating lessons learnt.

All Vedanta operations must implement all reasonable precautions to protect the health of employees and third parties and introduce preventative and protective measures, as follows:

- hazard elimination by removing the activity from the work process;
- hazard control at the source through the use of engineering control mechanism;
- hazard minimization through the design of safe systems of work, and administered control measures; and
- provision of appropriate Personal Protective Equipment (PPE) in conjunction with training, use and continual maintenance of the PPE.

Across Vedanta, health promotion is driven through the V-Fitness Programme, designed to reduce the burden of lifestyle related diseases and promote relaxation techniques, physical fitness and social wellbeing.

Prevention of occupational diseases is managed through a structured qualitative and quantitative Occupational Exposure Survey programme to record baseline employee exposures to workplace hazards. This is repeated every two years to record any changes from the baseline. Vedanta follows ACGIH Guidelines for Occupational Exposure Limits (OELs) and categorises the work zones depending upon personal exposure levels. Similar Exposure Groups have been formed and control measure tracking is in place to record benefits of new control measures and any process or operational changes to ensure all work zones remain below 50% of the OEL.

Fitness to work is ensured through our Medical Surveillance Programme that provides for early diagnosis and treatment of health conditions. These are identified by pre-employment, periodic, exit and special medical examinations, covering 100% of employees.

Health Impact Assessments of employees and communities are conducted at the start of any project and followed up every three years to design health activities that manage any potential impacts.

## EMERGENCY PREPAREDNESS PROCEDURES AND TRAINING



Vedanta's emergency preparedness planning is based on best practice guidelines from the International Council on Mining and Metals (ICMM) and the IFC EHS Guidelines.

Vedanta has comprehensive emergency and crisis management plans and guidelines in place at all levels – from Group to Business Unit. Emergency Preparedness and Response Plans exist across Vedanta to deal with incidents, emergencies and crisis situations.

A critical aspect of emergency preparedness is the ability to identify potential emergency situations. All Vedanta operations are required to systematically identify all reasonably foreseeable emergency and crisis situations, especially low probability/high consequence events.



## HINDUSTAN ZINC LIMITED (HZL) – THE AUTOMATION OF MOLTEN METAL TRANSFER FROM NOBLE FURNACE TO CUPEL FURNACE

Employees at the Pantnagar Metal Plant silver refinery had been manually transferring hot molten metal between furnaces, essentially putting them ‘in the line of fire’. The automation of this process was an urgent requirement.

Before this, the process involved multiple employees working close to furnace mouths, and sometimes needing manual intervention in handling the molten metal.

After automation, employees no longer have to operate the molten metal transfer system manually. The risk of a spillage of molten metal has been drastically reduced, along with dust fume emissions during metal transfer, and automated lock functions exist on all stages of the process. The systems operator now oversees activities remotely, at a safe distance away from the furnace.

“Our community health activities strive to improve the health and welfare of communities through the inclusion of medical infrastructure.”

## ACHIEVEMENTS AND CHALLENGES

A key objective for 2018 was to achieve a score of +75% in six key safety performance standards. Currently, our score sits at an average of 60%, with some units achieving the 75% target (i.e. Cairn Oil and Gas, Vedanta Zinc International and the Chanderiya Unit of Hindustan Zinc Limited). Performance towards this goal is measured and evaluated by the external auditing team from DNV, assisted by our Management Assurance Services, and overseen by the Group Executive Committee

## COMMUNITY HEALTH INTERVENTIONS

The health of the communities in which we operate is critical. Our contributions towards this include

- Health services provided to 1.13 million people
- More than 168,000 people reached through health awareness campaigns
- Over 210,000 people have benefitted from safe drinking water initiatives
- 57,000 community members benefitted from the construction of 8,746 household toilets and 61 community toilets

Many of our operations are located in areas where access to health, nutrition and sanitation facilities is scarce and local infrastructure and facilities are poor or non-existent. Our community health activities strive to improve the health and welfare of communities through the inclusion of medical infrastructure such as hospitals, clinics or health posts, which are supported by medical outreach services, and mobile health vans. Programmes are supported by blood donation camps, disease control campaigns and drug awareness drives.



## HINDUSTAN ZINC LIMITED

– “BEING SAFE”: A STEP TOWARDS  
ATTAINING “NO UNSAFE ACT”

With more than 10,000 contract employees working on various sites in Hindustan Zinc, inculcating safety as a responsibility is imperative. While safety compliance plays a decisive role, informal interaction with employees does generate additional traction for ‘Being Safe’.

‘Being Safe’ is a scientifically designed, interactive project. The objective is to reduce stress for employees, and ensure they can focus on safety – for themselves and their families.

‘Being Safe’ involves informal interactions with employees, the screening of special safety films and silent meditation sessions. After film screenings, employees are given the opportunity to discuss events in the films and how these apply to their own working situations.

‘Being Safe’ also focusses on safety on the road and at home.

Conceptualised as part of a communications project, ‘Being Safe’ workshops have so far been organised for about 2,500 employees, school children and families through 20 on-ground interactions.

In a new initiative, HZL is partnering with All India Radio (AIR) Rajasthan to broadcast daily five-minute safety slots, which will reach Rajasthan’s considerable rural and urban population.

